

GURLEY MODEL M58

ABSOLUTE ENCODER WITH SSI OUTPUT

MOTION TYPE:

ROTARY

USAGE GRADE:

INDUSTRIAL

OUTPUT:

ABSOLUTE

MAX RESOLUTION:

SINGLE-TURN: 2^{20}

MULTI-TURN: $2^{20} + 2^{24}$



INDUSTRIAL RUGGEDNESS, SINGLE OR MULTI-TURN

Major Features and Advantages:

- Up to 20-bit single-turn resolution available
- Up to 44-bit (20-bits/turn + 24-bit turns) gearless multi-turn resolution available
- Standard synchro flange
- SSI interface standard (RS-485) - 4 MHz clock frequency
- Accuracy: +/- 30 arcsec

The Model M58S with SSI output is a heavy-duty absolute rotary encoder with optical technology and standard SSI (RS485) interface, used in a wide variety of position sensing applications for measuring angles and distances.

It is available as a single-turn encoder with up to 20 bits of resolution (2,097,152 steps per revolution), or as a standard multi-turn with a range of 20-bit words/turn + 24-bit turns. The optical technology and magnetic sensors (for counting turns) allow the encoder to be gearless. A back-up battery is located inside the encoder and assures true absolute position even power is disrupted.

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**ISO
9001
CERTIFIED**

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SPECIFICATIONS

ELECTRICAL

Clock frequency	62.5 kHz to 4 MHz
Data output	Line-driver according to RS 485
Operating frequency	4 MHz max
Accuracy	+/- 30 arcsec
Supply voltage	+5 VDC \pm 0.25 V
Current consumption	50mA max
Output code format	Gray code or Natural Binary

MECHANICAL

Moment of inertia	$\leq 15 \text{ gcm}^2$ ($2.1 \times 10^{-4} \text{ in-oz-s}^2$)
RPM	Max. 12,000 (mechanical)
Shock	$\leq 100\text{g}$ (11 ms)
Sealing protection	IP65 (IP67 optional)
Humidity, %rh, non-condensing	98
Vibration	$\leq 10\text{g}$ (55 Hz to 2,000 Hz)
Max shaft loading	Axial 10 N (2 lb); Radial 20 N (4 lb)
Starting torque @ 20C	$\leq 0.01 \text{ Nm}$ (1.4 in-oz)
Maximum weight, oz (g)	10.6 (300) without cable

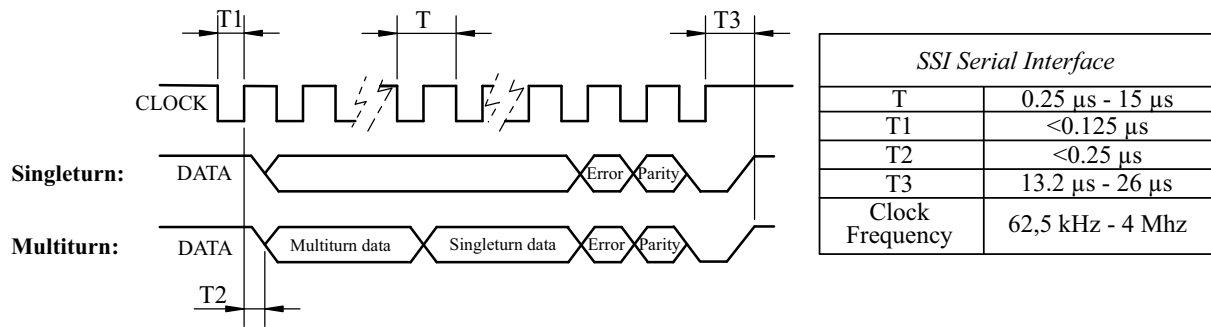
ENVIRONMENTAL

Operating temperature	Single-turn: - 20°C to + 80°C; Multi-turn: - 10°C to + 70°C
Storage temperature	Single-turn: - 30°C to + 90°C; Multi-turn: - 20°C to + 80°C
Humidity	98 % (non-condensing)
Light source	LED
Maximum cable length	25m

As part of our continuous product improvement program these specifications are subject to change without notice.

SYNCHRONOUS SERIAL INTERFACE (SSI)

SSI Serial Interface



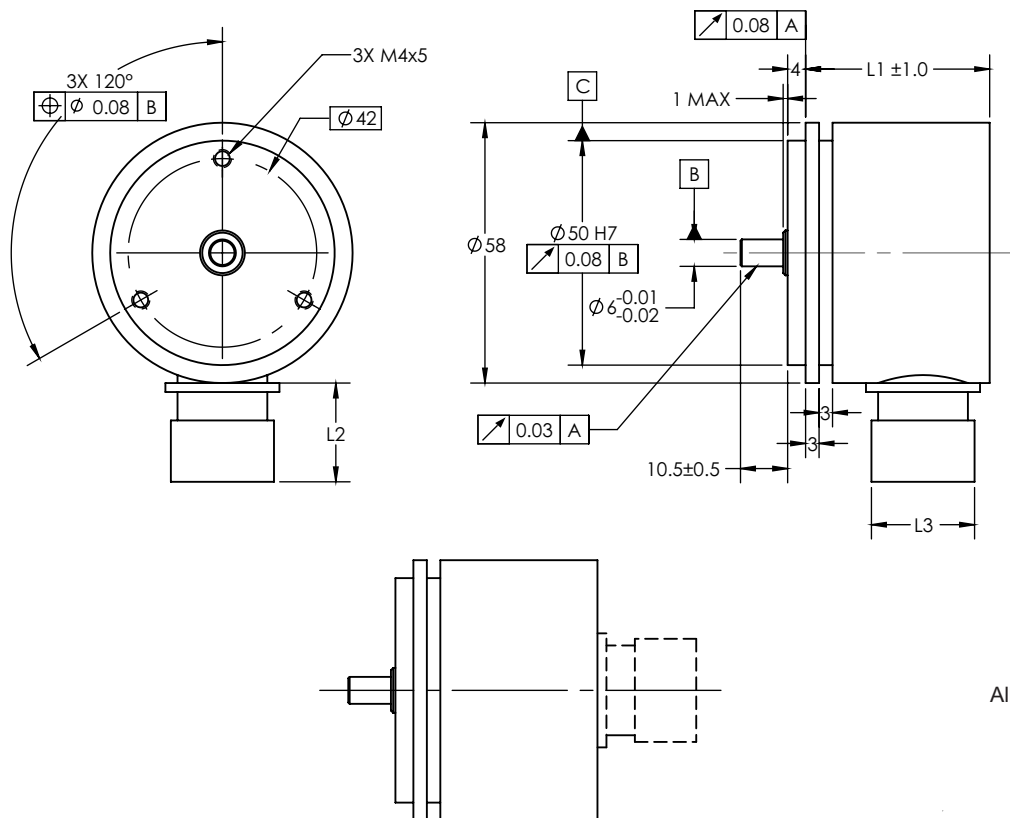
ELECTRICAL INTERFACE

Function		Wire color (CONN = P)	DE-9P (CONN = S)	M23 (CONN = M)
Clock -	INP	White	3	4
Clock +	INP	Light Blue	2	3
Data +	OUT	Green	6	5
Data -	OUT	Orange	7	6
V = +5 V or 10-30 V	PWR	Red	5	2
GND	PWR	Blue	9	1
Shield		Shield	1	Housing

MECHANICAL DIMENSIONS

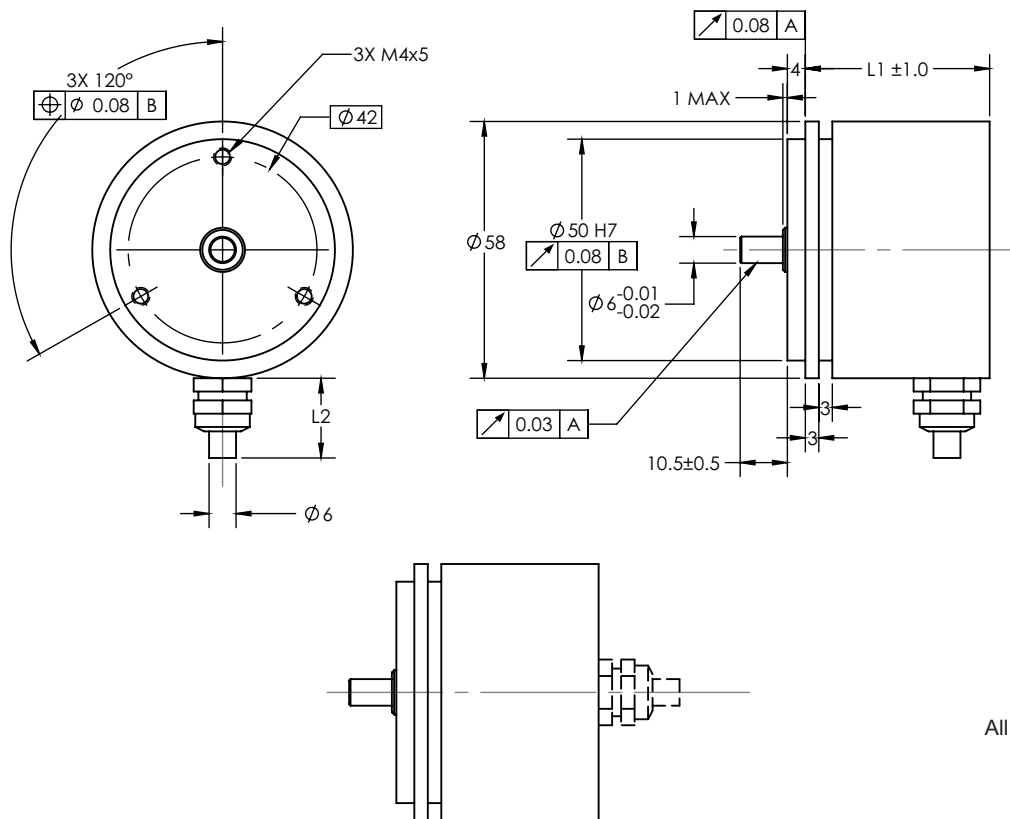
	Connector Type	M23 AXIAL	M23 RADIAL	CABLE CLAMP AXIAL	CABLE CLAMP RADIAL	CABLE EXIT RADIAL
Singleturn	L1	41	53	41	41	43
Multiturn	L1	64	76	64	64	66
Singleturn/Multiturn	L2	22	22	12	12	-
Singleturn/Multiturn	L3	M23	M23	-	-	-

M158S BASE A



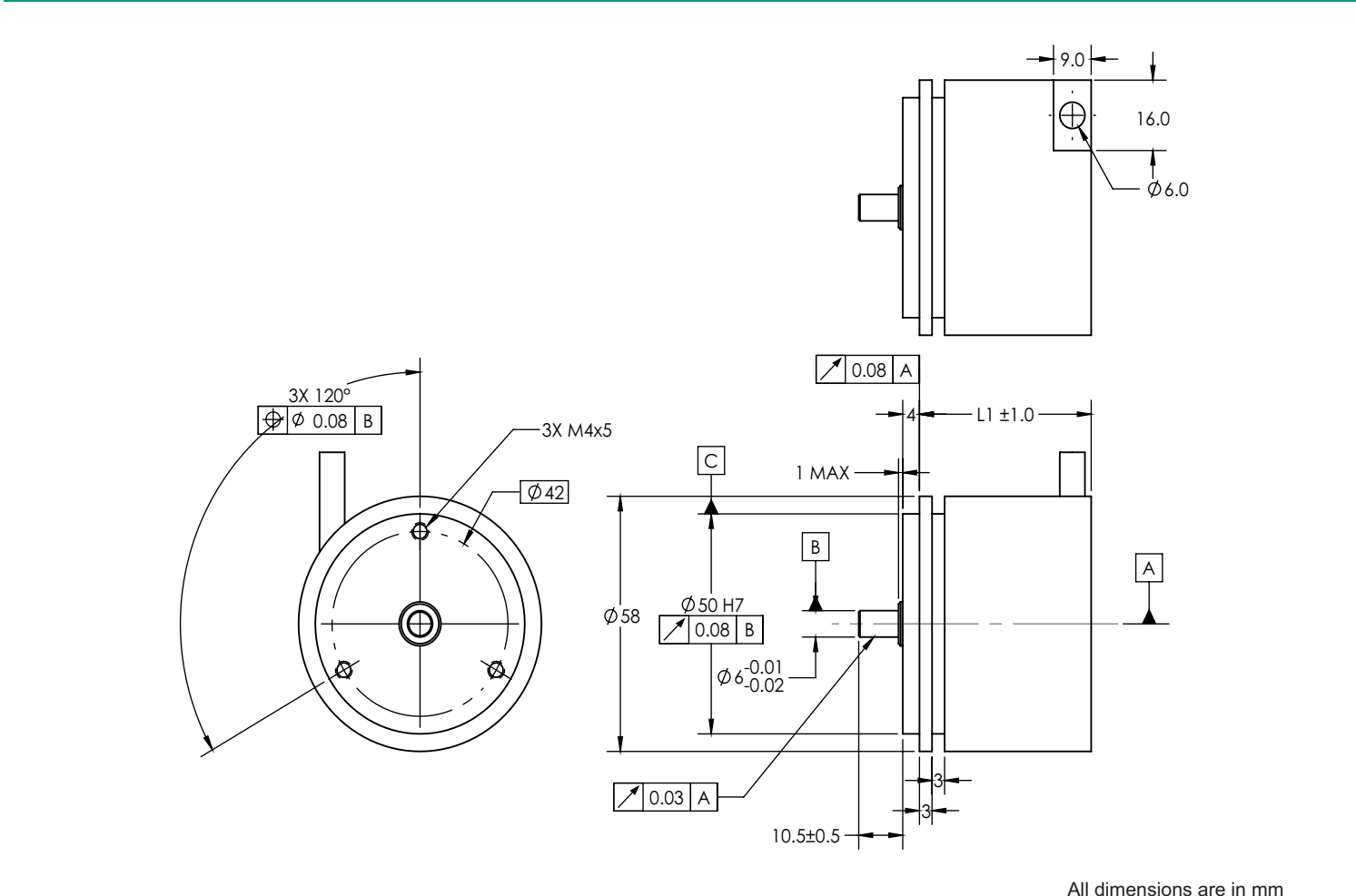
All dimensions are in mm

M158S BASE B

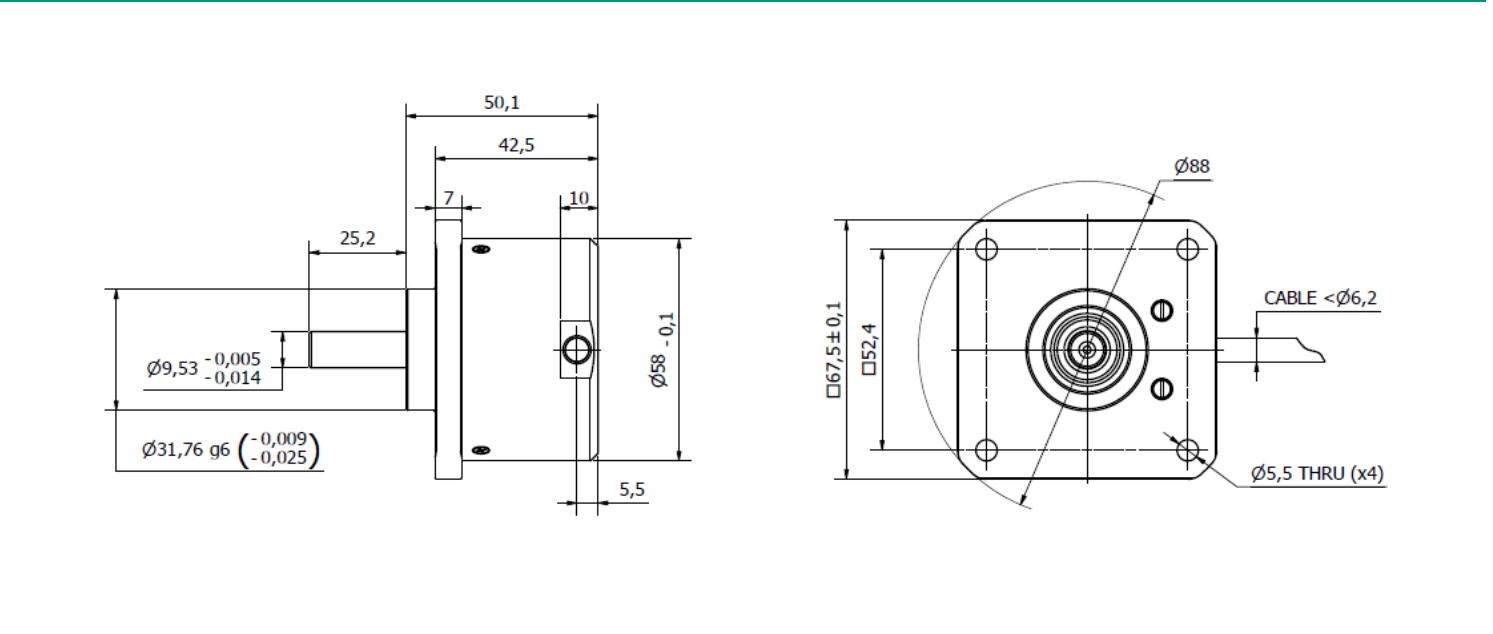


All dimensions are in mm

M158S BASE C



M158S BASE D



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ORDERING INFORMATION

M58

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SHAFT

IN

OC

RES

OF

URNS

BASE

TEMP

CABLE

EXIT

CONN

DIA

SF

SHAFT - Shaft type

S Solid shaft

IN - Input voltage

5 +5 VDC input voltage

OC - Output code

B Natural Binary

G Gray code

RES - Resolution/turn

09 - 20 9-bits - 20-bits/revolution

OF - Output format

S SSI

URNS - Number of turns

00 Single-turn

12, 16, 20, 24 Multi-turn -bit revolutions

BASE - Base mounting options

A Synchro/face, M23 connector (BASE A only)

B Synchro/face, cable clamp connector

C Synchro/face, side-exit cable

D Square flange, side-exit cable

TEMP Temperature

N -20C to +80C (Single-turn)

-10C to +70C (Multi-turn)

CABLE - Cable length, inches

40 40" Standard

00 With BASE code A

EXIT - Cable exit or connector location

T Top exit

S Side exit

CONN - Connector type

P Pigtails (no connector)

S DE-9P

M M23 (see wiring table)

DIA - Shaft diameter

06M 6 mm shaft diameter

SF - Special Features

N No special features

Issued at time of order to cover special customer requirements

SPECIAL CAPABILITIES

For special situations, we can optimize catalog encoders to provide higher frequency response, greater accuracy, wider temperature range, reduced torque, non-standard line counts, or other modified parameters. In addition, we regularly design and manufacture custom encoders for user-specific requirements. These range from high-volume, low-cost, limited-performance commercial applications to encoders for military, aerospace and similar high-performance, high-reliability conditions. We would welcome the opportunity to help you with your encoder needs.

WARRANTY

Gurley Precision Instruments offers a limited warranty against defects in material and workmanship for a period of one year from the date of shipment.

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